



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MSS405021A Develop a Just in Time system**

**Release: 1**

## **MSS405021A Develop a Just in Time system**

### **Modification History**

New unit, superseding MSACMT621A Develop a Just in Time (JIT) system\* - Not equivalent

\* Prerequisite MSACMC410A Lead change in a manufacturing environment - removed

### **Unit Descriptor**

Not applicable.

### **Application of the Unit**

This unit applies to a person responsible for planning and implementing a JIT system. It includes consulting with employees, suppliers and customers regarding the change. This may require identification of training and other employee support as well as identifying possible logistical support.

The unit includes kanban-based JIT systems but also applies to other sectors and systems where a traditional kanban-type JIT may not be suitable through the unit's coverage of JIT principles.

This unit requires the application of skills associated with communication in gathering, analysing and applying information, consulting with stakeholders, problem solving, and demonstrating initiative and enterprise. This unit also requires aspects of self-management and learning to ensure feedback and new learning is integrated into the JIT design.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

## Employability Skills Information

This unit contains employability skills.

### Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

### Elements and Performance Criteria

1	Design the JIT system/system improvements	1.1	Identify value chain members
		1.2	Consult with internal and external value chain members
		1.3	Identify current storage/inventory in value chain
		1.4	Determine flow authorisation indicators
		1.5	Determine minimum and maximum operations rate
		1.6	Determine lead time for product or service
		1.7	Determine number of units per kanban
		1.8	Draft workable procedures to implement JIT
2	Implement the JIT system/improvements	2.1	Consult with key internal stakeholders to develop solutions to JIT issues
		2.2	Ensure all stakeholders have required JIT-related skills and related issues have been resolved
		2.3	Liaise with key external members of the value chain to develop solutions to JIT issues
		2.4	Develop implementation plan for JIT
		2.5	Determine key measures of JIT

- 3 Monitor the JIT system
  - 3.1 Monitor key measures of JIT
  - 3.2 Regularly liaise with key stakeholders seeking areas for improvement
  - 3.3 Identify areas in need of improvement

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

Required skills include:

- communicating at all levels in the organisation and value stream and to audiences of different levels of literacy and numeracy
- undertaking self-directed problem solving and decision-making on issues of a broad and/or highly specialised nature and in a wide variety of contexts
- analysing equipment, operations and value stream and determining best flow authorisation strategy, including:
  - form of kanban or flow authorisation indicator
  - integration with operations and other competitive systems and practices tools and techniques
  - key measures and monitoring strategy for JIT system
  - procedures to be adopted in the event of a non-conformance
- problem solving JIT issues and non-conformances to root cause

### Required knowledge

Required knowledge includes:

- needs of internal and external value chain members
- principles of JIT, including:
  - demand pull
  - flow authorisation
  - kanban
  - capability rate
  - monitoring
  - non-conformance procedures
- reasons for delays/storages/inventories in the value stream and methods of reducing/eliminating them
- methods of identifying skill gaps and methods of filling skill gaps
- key business objectives associated with implementing JIT
- principles of the operational processes relevant to the JIT implementation
- production data generated by the process and its application to JIT

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>A person who demonstrates competency in this unit must be able to provide evidence of their ability to:</p> <ul style="list-style-type: none"> <li>• develop a complete JIT system, including:             <ul style="list-style-type: none"> <li>• implementation strategy</li> <li>• key measures</li> <li>• training and support strategy for employees and value chain members</li> <li>• procedures in the event of a non-conformance</li> </ul> </li> <li>• communicate and negotiate complex issues to a wide variety of individuals</li> <li>• supervise JIT implementation and suggest improvements.</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p> <p>Access may be required to:</p> <ul style="list-style-type: none"> <li>• workplace procedures and plans relevant to work area</li> <li>• specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee</li> <li>• documentation and information in relation to production, waste, overheads and hazard control/management</li> <li>• reports from supervisors/managers</li> <li>• case studies and scenarios to assess responses to contingencies.</li> </ul>
<p><b>Method of assessment</b></p>	<p>A holistic approach should be taken to the assessment.</p> <p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> <li>• demonstration in the workplace</li> <li>• workplace projects</li> <li>• suitable simulation</li> <li>• case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on)</li> <li>• targeted questioning</li> </ul>

	<ul style="list-style-type: none"> <li>• reports from supervisors, peers and colleagues (third-party reports)</li> <li>• portfolio of evidence.</li> </ul> <p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p>
<p><b>Guidance information for assessment</b></p>	<p>This unit may be assessed concurrently with:</p> <ul style="list-style-type: none"> <li>• MSS405002A Analyse and map a value stream, and/or</li> <li>• MSS405050A Determine and improve process capability.</li> </ul> <p>This unit is related to:</p> <ul style="list-style-type: none"> <li>• MSS402021A Apply Just in Time procedures</li> <li>• MSS403021A Facilitate a Just in Time system</li> </ul> <p>which cover the lowest and intermediate skill levels in competitive systems and practices respectively.</p> <p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.</p>

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><b>Competitive systems and practices</b></p>	<p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• lean operations</li> <li>• agile operations</li> <li>• preventative and predictive maintenance approaches</li> <li>• monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA)</li> </ul>
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	<p>software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems</p> <ul style="list-style-type: none"> <li>• statistical process control systems, including six sigma and three sigma</li> <li>• JIT, kanban and other pull-related operations control systems</li> <li>• supply, value, and demand chain monitoring and analysis</li> <li>• 5S</li> <li>• continuous improvement (kaizen)</li> <li>• breakthrough improvement (kaizen blitz)</li> <li>• cause/effect diagrams</li> <li>• overall equipment effectiveness (OEE)</li> <li>• takt time</li> <li>• process mapping</li> <li>• problem solving</li> <li>• run charts</li> <li>• standard procedures</li> <li>• current reality tree</li> </ul> <p>Competitive systems and practices should be interpreted so as to take into account:</p> <ul style="list-style-type: none"> <li>• the stage of implementation of competitive systems and practices</li> <li>• the size of the enterprise</li> <li>• the work organisation, culture, regulatory environment and the industry sector</li> </ul>
<b>JIT</b>	<p>JIT is a production scheduling concept that calls for any item or service needed at a production operation, whether raw material, components, fuel, power, finished item, or anything else in between raw material and delivery to the final customer, to be produced and available precisely when needed, neither a moment earlier nor a moment later. JIT principles may also be applied to non-product based manufacturing operations (e.g. where services must be delivered on demand, such as transport)</p>
<b>Kanban</b>	<p>Kanban is a signal to authorise production or movement of an item to the next stage of production or operations. It is often a physical item for example a card, bin or sheet. When fully implemented, kanban operates according to the following rules:</p> <ul style="list-style-type: none"> <li>• all production and movement of parts, material or other necessary items takes place only as required by</li> </ul>



	<p>a downstream operation</p> <ul style="list-style-type: none"> <li>the specific tool which authorises production or movement is called a kanban</li> </ul> <p>Kanban is typically applied to batch type operations and the production is measured in units produced. In continuous operations organisations, production is measured in terms of production rate (e.g. kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (e.g. ticket or order from a supplier) or may be a SCADA signal from a remote facility (e.g. customer tank) saying that resupply is required or similar.</p> <p>In service operations a physical kanban may not be used – see flow authorisation indicator</p>
<b>SCADA</b>	<p>SCADA refers to:</p> <ul style="list-style-type: none"> <li>a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information personnel for action</li> </ul>
<b>Value stream</b>	<p>The value stream begins with the customer and includes all actions (both value-adding and non-value added) by both internal sections/departments and external organisations to meet a customer requirement.</p> <p>Depending on the operations and the customer requirement stages where value stream actions may occur include:</p> <ul style="list-style-type: none"> <li>sales outlet/representative</li> <li>information gathering, data analysis and research</li> <li>product design</li> <li>raw material sourcing</li> <li>intermediate processing</li> <li>final assembler/ collation/preparation</li> <li>support services (e.g. accounting, finance and legal)</li> <li>storage and delivery to customer</li> <li>after market support</li> </ul>
<b>Flow authorisation indicator</b>	<p>Flow authorisation indicator may include:</p> <ul style="list-style-type: none"> <li>kanban bin, ticket or similar</li> <li>other indicator of demand pull</li> </ul>
<b>Pull system</b>	<p>Pull system includes:</p> <ul style="list-style-type: none"> <li>an operations planning system which makes to demand, rather than for stock or to a forecast</li> </ul>

<b>Cards/bins</b>	<p>Cards/bins include:</p> <ul style="list-style-type: none"> <li>• the indicators used for production authorisation and may be physical cards or bins or some other suitable indicator</li> </ul>
<b>Procedures</b>	<p>Procedures may include:</p> <ul style="list-style-type: none"> <li>• work instructions</li> <li>• standard operating procedures</li> <li>• formulas/recipes</li> <li>• batch sheets</li> <li>• temporary instructions and similar instructions provided for the smooth running of the plant</li> <li>• good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care)</li> <li>• government regulations</li> </ul> <p>Procedures may be:</p> <ul style="list-style-type: none"> <li>• written, verbal, computer-based or in some other format</li> </ul>
<b>Key measures</b>	<p>Key measures may include:</p> <ul style="list-style-type: none"> <li>• inventory levels</li> <li>• lead time</li> <li>• in full, on time and in specification (IFOTIS) delivery</li> <li>• productivity/production rate</li> <li>• other measures of pull through the value chain</li> <li>• quality</li> </ul>

## Unit Sector(s)

Unit sector

Competitive systems and practices

## Custom Content Section

Not applicable.